

REMARKS/ARGUMENTS

Favorable reconsideration of this application in view of the above amendments and the following remarks is respectfully requested.

Applicants appreciate the courtesies extended to Applicants representative during the personal interview held March 17, 2009. Applicant's statement of substance of the personal interview is incorporated into the above amendments and following remarks.

Claims 12-22 are pending in this application. By this amendment, Claim 13 is amended; and no claims are canceled or added herewith. It is respectfully submitted that no new matter is added by this amendment.

In the Outstanding Office Action, Claims 12-14 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. 2002/0053759 to Caretta.

It is respectfully submitted the applied art does not teach or suggest a bladder that is expandable and contractible at a vulcanization position as well as at a tire delivery position, the method including expanding the bladder at the delivery position to make the bladder hold the green tire loaded into the tire delivery position, making the bladder load the green tire into the segmented tread mold at the vulcanization position, making the bladder remove the vulcanized tire from the vulcanization position to the delivery position and contracting the bladder at the delivery position for releasing the vulcanized tire from the bladder, as recited in Claim 12.

Nor does the applied art teach or suggest a pair of bladder operating sleeves movable vertically to air-tightly bind upper and lower end ring portions of a bladder which is expanded inside the green tire, the method including making a single centering shaft pass through centers of the lower mold, the upper mold, the green tire, the bladder and the pair of bladder operating sleeves during a vulcanization and performing the vulcanization processing

with the single centering shaft centering the pair of bladder operating sleeves relative to the lower mold and the upper mold, as recited in Claim 13.

Instead, Caretta discusses in [0068-0071] that the apparatus includes at least one toroidal support 10 made of metal material or another solid material, having an outer surface 10a that substantially matches the shape of an inner surface of tire 7. Engagement of the tire 7 on toroidal support 10 can be obtained by manufacturing the tire directly on the support itself. In this way, toroidal support 10 is a rigid model for formation of reinforcing structures at the beads, belt layers, etc. cooperating in forming the tire itself. As such, Caretta teaches that the geometric conformation of the inner surface of green tire 7 will conform to the outer surface of toroidal support 10. Toroidal support 10 is made up of a drum so that it can be disassembled and removed from tire 7 when the tire manufacture has been completed.

Accordingly, there is no teaching or suggestion for the features of the claimed invention discussed above with respect to a tire vulcanization method utilizing a bladder. Caretta discusses in [0005] of the Background section that a known molding method is to provide a vulcanization bladder of elastomer material filled with high-temperature and high-pressure steam inflated at the inside of the tire enclosed in a molding cavity. However, Caretta further recognizes in [0010-0012] that bladder deformability can give rise to geometric and/or structural imperfections in the tire due to possible distortions suffered by the bladder, itself, following an unbalanced expansion for example, and/or due to friction phenomena generated between the outer surfaces of the bladder and the inner surfaces of the green tire. Further, Caretta recognizes that the bladder deformability makes it difficult to reach sufficiently high pressures for bead locking. Thus, undesired misalignments of the beads relative to the geometric axis of the tire may occur, giving then rise to distortions of the whole tire structure. As such, Caretta discusses that an important advantage of the invention is that by using a rigid toroidal support during the molding and curing step enables a desirable

centering of the tire within the vulcanization mould to be achieved, and allows a greater control of the geometric and structural features of the tire itself during the expansion step as compared with traditional processes using inflatable vulcanization bladders.

However, in accordance with an example of the present invention as discussed on pages 4-5, a tire vulcanizing method includes the bladder enabled to expand and contract at a vulcanization position within the segmented tread mold as well as to expand and contract also at a tire delivery position. The method includes the steps of expanding the bladder at the delivery position, making the bladder load the green tire into the segmented tread mold at the vulcanization position, after the vulcanization processing, making the bladder remove the vulcanized tire from the vulcanization position to the delivery position, and contracting the bladder at the delivery position for releasing the vulcanized tire from the bladder. According to this example, the bladder is utilized for loading and unloading. That is, the bladder operates to load the green tire into the segmented tread mold by transferring the green tire from the tire delivery position to the vulcanization position as well as to return the vulcanized tire to the delivery position by removing the vulcanized tire from the vulcanization position. Thus, it becomes unnecessary to provide any transfer device for performing the loading/unloading of the tire inside the vulcanizer, so that the same can be simplified in construction.

Further, in accordance with an example of the present invention, when receiving the green tire at the delivery position, the bladder retains the green tire in the predetermined shape which it takes at the time of expansion, in contact with the whole internal surface of the green tire, the bladder loads the green tire into the mold while retaining the predetermined shape, and the bladder retains the internal surface of the tire in the predetermined shape during the vulcanization. This results in precluding bad effects which are accompanied by the prior art loading means for holding the easily deformable green tire at several portions

thereof and for loading it into the molds. Since the bladder which expands to the predetermined shape at the stage of receiving the green tire at the delivery position supports the green tire equally at the whole region of the internal surface thereof, the accurate forming of the green tire is ensured, so that the tire shape after the vulcanization processing can be retained accurately.

Accordingly, the features of the claimed invention are not provided, are not taught by the applied art, and the applied art cannot provide at least the advantages discussed above. Withdrawal of the rejections of the claims under 35 U.S.C. § 102 as anticipated by Caretta is respectfully requested.

Consequently, for the reasons discussed in detail above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below listed telephone number.

Respectfully submitted,

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